IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method, comprising:

combining at least carbon nanotubes and an alignment material to result in a combined material; ~~and~~

causing the alignment material to align the carbon nanotubes; and

arranging the combined material with the aligned carbon nanotubes between a microprocessor die and a heat remover, the heat remover comprising a structure selected from the group consisting of a heat sink, a vapor chamber, and a heat pipe, wherein when the microprocessor die is in operation the combined material functions as a thermal interface material to conduct heat generated by the microprocessor die between the microprocessor die and the heat remover.

2. (original) The method of claim 1, wherein causing the alignment material to align the carbon nanotubes comprises applying a shear force to the combined material.

3. – 4. (canceled)

5. (original) The method of claim 1, wherein the resulting combined material contains greater than five percent by weight carbon nanotubes.

6. (original) The method of claim 1, further comprising combining a matrix material with the carbon nanotubes and alignment material to result in the combined material.

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7. (original) The method of claim 6, wherein the matrix material comprises at least one of silicone polymer, epoxy polymer, olefin polymer, indium solder, or tin solder.

8. (original) The method of claim 1, further comprising combining a filler material with the carbon nanotubes and alignment material to result in the combined material.

9. (original) The method of claim 8, wherein the filler material is a thermally conductive material comprising at least one of aluminum oxide, boron nitride, aluminum nitride, aluminum, copper, silver, or indium solder.

10. (original) The method of claim 1, wherein the alignment material comprises a clay material.

11. (original) The method of claim 10, further comprising preparing the clay material, wherein preparing the clay material comprises:

dispersing the clay material in hot water having a temperature ranging from about 50 degrees Celsius to about 80 degrees Celsius;

adding cation salt to the clay dispersed in hot water;

blending the cation salt and clay;

isolating the clay; and

reducing a clay particle size to a mean size of less than about 100 microns.

12. (original) The method of claim 11, further comprising:

combining an alpha-olefinic resin matrix material with the carbon nanotubes and the prepared clay to result in the combined material, the combined material having about thirty percent by weight carbon nanotubes, about 10 percent

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by weight prepared clay, and about sixty percent by weight alpha-olefinic resin matrix material;

wherein causing the prepared clay alignment material to align the carbon nanotubes comprises extruding the combined material; and

dividing the extruded combined material into pads of a selected size.

13. (original) The method of claim 10, wherein the clay material comprises a swellable free flowing powder having a cation exchange capacity from about 0.3 to about 3.0 milliequivalents per gram of clay material.

14. (original) The method of claim 10, wherein the clay material comprises platelet particles with a mean thickness of less than about two nanometers and a mean diameter from about 10 nanometers to about 3000 nanometers.

15. – 36. (canceled)

37. (new) A method, comprising:

producing heat by operating a microprocessor die, at least some of the heat being transferred from the die to a heat remover along a thermal path, the heat remover comprising a structure selected from the group consisting of a heat sink, a vapor chamber, and a heat pipe, and at least some of the thermal path being a thermal interface material between the die and heat remover; and

wherein the thermal interface material comprises carbon nanotubes and an alignment material, the carbon nanotubes being aligned along the direction of heat transfer.

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38. (new) The method of claim 37, wherein the alignment material comprises a clay material.

39. (new) The method of claim 38, further comprising preparing the clay material, wherein preparing the clay material comprises:

dispersing the clay material in hot water having a temperature ranging from about 50 degrees Celsius to about 80 degrees Celsius;

adding cation salt to the clay dispersed in hot water;

blending the cation salt and clay;

isolating the clay; and

reducing a clay particle size to a mean size of less than about 100 microns.

40. (new) The method of claim 39, further comprising:

combining an alpha-olefinic resin matrix material with the carbon nanotubes and the prepared clay to result in the combined material, the combined material having about thirty percent by weight carbon nanotubes, about 10 percent by weight prepared clay, and about sixty percent by weight alpha-olefinic resin matrix material;

wherein causing the prepared clay alignment material to align the carbon nanotubes comprises extruding the combined material; and

dividing the extruded combined material into pads of a selected size.

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